

REMARKS

The claims are claims 1, 2 and 4 to 9.

The application has been amended at several places. These amendments correct non-standard symbols which were originally printed incorrectly.

Claim 3 is canceled.

Claims 1 and 6 were rejected under 35 U.S.C. 102(b) as anticipated by Okuno et al. The OFFICE ACTION states at page 2, line 21 to page 3, line 4:

"Okuno et al discloses (column 9, lines 1-35) a printer in which pixel input values are converted into pixel output values and a screen of color value pixels is placed on a print medium in accordance with the pixel output values and at least one control signal (a halftone curve selected by the operator). Polynomial coefficients are selected and retrieved from a lookup table for each pixel based on its density level and its color (column 27-29)."

Claims 1 and 6 recite subject matter not anticipated by Okuno et al. Claims 1 and 6 recite storing "polynomial coefficients approximating each of said plurality of tone curves in a look-up table." The Applicant respectfully submits that the table storage of Okuno et al is of differing data than the recited polynomial coefficients approximating the tone curves. Okuno et al discloses at column 7, line 60 to column 8, line 42 and illustrates in Figures 4(a), 4(b), 4(c), 4(d) and 4(f) tone curves used in printing. Okuno et al fails to disclose these tone curves are approximated by polynomial coefficients as recited in claims 1 and 6. Okuno et al fails to teach any manner of approximating these tone curves but merely states they are used to convert the document image intensity level to print image intensity level. Okuno et al teaches a table storing different data than the polynomial

coefficients approximating the tone curves recited in claims 1 and 6. Okuno et al states at column 9, lines 27 to 35:

"FIG. 14 shows a table of toner adhesion correction coefficients α_L for each density level, determined in accordance with the halftone curve selected by the operator. A table is provided for toner of each color because the relationship between the amount of adhered toner and the print density is different depending on the color of the toner. These correction coefficients are empirically determined to take into account the characteristics of the copying apparatus, the toner and the tone particular correction curve."

Okuno et al teaches this a correction coefficient is "the relationship between the amount of adhered toner and the print density." Okuno et al further states at column 8, lines 47 to 52:

"The amount of toner that actually adheres to the copy sheet, however, does not increase in proportion to the density level increase, but rather increases nonlinearly as indicated by the solid line (a) in FIG. 6. This nonlinearity corresponds to the nonlinear relationship between density and amount of adhered toner."

These portions of Okuno et al make clear that the stored coefficient data is the relationship between print image density and toner adhesion. Thus Okuno et al fails to store polynomial coefficients approximating the tone curve as recited in claims 1 and 6. Accordingly, claims 1 and 6 are not anticipated by Okuno et al.

Claims 1 and 6 recite further subject matter not anticipated by Okuno et al. Claim 1 recites "recalling said polynomial coefficients approximating said tone curve associated with said pixel of said screening matrix mapped to said pixel." Claim 6 similarly recites "recalling a corresponding set of polynomial coefficients approximating a tone curve associated with said pixel of said screening matrix mapped to said pixel, determined in

accordance with the halftone curve selected by the operator." Okuno et al fails to teach such recall. Figure 14 of Okuno et al teaches storage of "toner adhesion correction coefficients α_L for each density level." Thus Okuno et al clearly teaches that the halftone curve is an input index into his table. This negates any inference that the output of the table is "polynomial coefficients approximating a tone curve associated with said pixel" as recited in claims 1 and 6. Accordingly, claims 1 and 6 are not anticipated by Okuno et al.

Claims 1 and 6 recite still further subject matter not anticipated by Okuno et al. Claims 1 and 6 recite "computing a pixel output value from a pixel input value of said pixel and said recalled polynomial coefficients." This computation differs from the computation taught in Okuno et al. Okuno et al states at column 9, lines 21 to 26:

"In contrast, in the copying apparatus of the present invention, the frequency of pixels of each density level 0.about.255 in a document is calculated to determine a count value AL (where L is 0.about.255), and a correction coefficient a_L (where L is 0.about.255) is determined for each density level by the selected halftone curve and is multiplied by the aforesaid determined value AL. The amount of toner consumed in conjunction with a copy operation of the document is estimated based on the sum total value determined by the aforesaid multiplication relative to each density level, so as to set the amount of toner to be resupplied."


Thus Okuno et al calculates the amount of toner used rather than the pixel output value recited in claims 1 and 6. Note that Okuno et al clearly teaches at column 8, lines 47 to 52 (quoted above) that the amount of toner adhering to the sheet and used is not the same as the print density. Accordingly, claims 1 and 6 are not anticipated by Okuno et al.

Paragraph 4 of the OFFICE ACTION stated that claims 2, 4, 5, and 7 to 9 were allowable.

The Applicants respectfully submit that all the present claims are allowable for the reasons set forth above. Therefore early reconsideration and advance to issue are respectfully requested.

If the Examiner has any questions or other correspondence regarding this application, Applicants request that the Examiner contact Applicants' attorney at the below listed telephone number and address to facilitate prosecution.

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Respectfully submitted,

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